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|--|-------------|----------------------|---------------------|------------------|
| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/597,518   | 07/27/2006  | Kentaro Nakahara     | NEC 04P315          | 2255             |
| 27667  | 7590        | 11/13/2009           | EXAMINER            |                  |
| HAYES SOLOWAY P.C.<br>3450 E. SUNRISE DRIVE, SUITE 140<br>TUCSON, AZ 85718 |             |                      | HAN, KWANG S        |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 1795                |                  |
|  |             |                      | NOTIFICATION DATE   | DELIVERY MODE    |
|  |             |                      | 11/13/2009          | ELECTRONIC       |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

admin@hayes-soloway.com  
smckniff@hayes-soloway.com  
nsoloway@hayes-soloway.com

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/597,518 | <b>Applicant(s)</b><br>NAKAHARA ET AL. |  |
|                              | <b>Examiner</b><br>Kwang Han         | <b>Art Unit</b><br>1795                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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**POWER STORAGE DEVICE HAVING A NITROXYL POLYMER IN A CATHODE AND  
A LITHIUM OR LITHIUM ALLOY ANODE**

Examiner: K. Han    SN: 10/597,518    Art Unit: 1795    November 10, 2009

**Detailed Action**

1.     The Applicant's amendment filed on July 7, 2009 was received. Claims 1 and 6 were amended.
2.     The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Drawings***

3.     The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 1 shows an element 7 in the drawing which is not described in the specifications. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

4. The objection to the specification has been withdrawn in view of the Applicant's amendment to the title.

***Claim Rejections - 35 USC § 112***

5. The claim rejections under 35 U.S.C. 112, first paragraph, on claims 1-6 are withdrawn, because independent claim 1 has been amended.

***Claim Rejections - 35 USC § 102***

6. Claims 1 and 3-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakahara et al. (JP 2002-304996, machine translation) is maintained.

Regarding claim 1, Nakahara is directed towards an electric storage device (power storage device) comprising a nitroxyl polymer which has a nitroxyl cation partial structure and a nitroxyl radical partial structure [Abstract, 0008-0009] in a cathode. Nakahara further discloses using lithium as the anode active material [0045] and the use of a solid electrolyte without the use of a separator (the cathode in direct contact with the anode) [0050].

Regarding claims 3 and 4, Nakahara discloses the collector to be comprised of various materials including a carbon raw material and aluminum [0046].

Regarding claim 5, Nakahara discloses the cyclic nitroxyl structure [0010].

Regarding claim 6, Nakahara discloses the nitroxyl polymer compound having a side chain containing a residue which removes at least one hydrogen atom bonded to an element forming at least one cyclic nitroxyl structure [0017-0022].

***Claim Rejections - 35 USC § 103***

7. Claim 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al. as applied to claim 1 above and further in view of McManis et al. (US 4632889) is maintained.

Regarding claim 2, the teachings of Nakahara as discussed above are herein incorporated.

McManis teaches a lithium alloy composite for battery applications including lithium-aluminum and lithium-silicon alloys for the benefit of forming an anode which discharges at high rates in a variety of electrolytes (1:44-57). It would have been obvious to one of ordinary skill in the art at the time of the invention to use an anode including active materials comprised of lithium-silicon alloy because McManis teaches it forms an anode for a battery with high discharge rates in a variety of electrolytes.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al. as applied to claim 1 above and further in view of Inoue et al. (US 6090506) is maintained.

Regarding claim 3, Nakahara discloses the collector to be comprised of various materials including a carbon raw material and aluminum [0046].

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Inoue teaches a current collector for a battery composed of materials which undergo no chemical change within the battery including aluminum with carbon treated on the surface (13:32-39). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a current collector for a battery comprised of aluminum with carbon because Inoue teaches these materials undergo no chemical change within the battery and is electrically conductive.

9. Claim 3 and 4 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al. as applied to claim 1 above and further in view of Farahmandi et al. (US 5777428) is maintained.

Regarding claims 3 and 4, Nakahara discloses the collector to be comprised of various materials including a carbon raw material and aluminum [0046].

Farahmandi teaches a capacitor having an aluminum impregnated with carbon electrode (including carbon paper; 5:51-52) to form a composite electrode attached to the current collector plate to form a high performance double layer capacitor (5:50-58-6:25-45). It would have been obvious to one of ordinary skill in the art at the time of the invention to use an aluminum electrode impregnated with carbon in Nakahara's electric storage device because Farahmandi teaches it provides for a bipolar type double layer capacitor that can deliver large amounts of useful energy at a very high power output and power density rating (5:21-24).

### ***Double Patenting***

10. Claims 1, 4 and 5, provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3, 5 and 6 of copending Application No. 10/597517 has been withdrawn in view of the Applicant's filing of a Terminal Disclaimer on July 7, 2009.

### ***Response to Arguments***

11. Applicant's arguments filed July 7, 2009 have been fully considered but they are not persuasive.

*Applicant's principal arguments are:*

*(a) the Nakahara reference does not teach "the cathode contains an electrolyte and is in direct contact with the anode."*

In response to Applicant's arguments, please consider the following comments:

(a) Nakahara clearly teaches that if a solid electrolyte is used a separator is not required as discussed in the rejection above. A cathode in combination with this solid electrolyte is in direct contact with the anode as required in the limitations of the claim.

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact/Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwang Han whose telephone number is (571) 270-5264. The examiner can normally be reached on Monday through Friday 8:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571) 272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. H./

Examiner, Art Unit 1795

/Dah-Wei D. Yuan/

Supervisory Patent Examiner, Art Unit 1795